

**REMARKS**

Claims 1-32 are pending. Claims 1-5, 12, 14-18 and 22 have been amended in accordance with the proposed claim amendments discussed with the Examiner on April 6, 2007, and forwarded to the Examiner by facsimile on April 12, 2007. Applicants respectfully request reconsideration of the application in response to the non-final Office Action.

**Claim Rejection – 35 U.S.C. §101**

Claims 1-32 have been rejected under 35 U.S.C. §101 for allegedly claiming an invention that is not supported by either a specific and substantial asserted utility, a credible asserted utility or a well-established utility. Applicants respectfully traverse the rejection.

In the Federal Circuit's decision, *In re Comiskey*, No. 2006-1286 (Fed. Cir. September 20, 2007), Comiskey's method claims, directed to a way of requiring and conducting arbitration, were found to be unpatentable under 35 U.S.C. §101 as seeking "to patent the use of human intelligence in and of itself." With respect to Comiskey's system claims, the Court found that while the mere use of a machine to collect data necessary for application of a mental process may not make a claim patentable subject matter, Comiskey's system claims, in combining the use of machines (e.g., a computer) with a mental process, claimed patentable subject under 35 U.S.C. §101.

Further, *The Manual of Patent Examining Procedure* (MPEP) §2106 and the *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, United States Patent and Trademark Office Official Gazette Notices (November 22, 2005) ("*Interim Guidelines*") set forth an approach for determining

whether patent eligible subject matter has been claimed in accordance with 35 U.S.C. §101. First, it is determined whether the claimed invention falls within an enumerated statutory category, that is, a process, machine, manufacture, or composition of matter. Second, it is determined whether the claimed invention falls within a judicial exception, that is, laws of nature (e.g.,  $f=ma$ ), natural phenomena (e.g., electricity), or abstract ideas (e.g., mathematical algorithms). (See, *Interim Guidelines* §IV(C)).

Not until it is determined that a judicial exception applies is it determined whether the claimed invention recites a "practical application" of the judicial exception. A practical application can be achieved in one of two ways: (1) by producing a physical transformation, or (2) by producing a useful, concrete, and tangible result. (See, *Interim Guidelines* §IV(C)(2)). A physical transformation can be produced by transforming an article or physical object to a different structural state or thing. (See, *Interim Guidelines* §IV(C)(2)(a)).

When no physical transformation is produced, a claimed invention can provide a practical application by producing a "useful, concrete, and tangible" result. (See, *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) and *Interim Guidelines* §IV(C)(2)(b)). To produce a "useful" result, the utility of the claimed invention must be "specific," "substantial" and "credible." (See, *Interim Guidelines* §IV(C)(2)(b)(1) and MPEP §2107). A "concrete" result is a result that can be substantially repeated. (See, *Interim Guidelines* §IV(C)(2)(b)(3)). A "tangible" result is a real-world result that is not abstract (e.g., a thought is abstract). See, *Interim Guidelines* §IV(C)(2)(b)(2)).

The Office concluded on page 2 of the Office action that claims 1-32 are unpatentable under 35 U.S.C. §101 for claiming an invention that "is not supported by either a specific and substantial asserted utility, a credible asserted utility or a well-established utility." Thus, in making this determination, the Office presumably determined that the claims fall within a judicial exception (i.e., are directed to nothing more than laws of nature, natural phenomena, or abstract ideas) and do not provide a practical application of the judicial exception by producing a physical transformation, thereby necessitating the consideration of whether the claims provide a practical application by producing a "useful, concrete, and tangible" result.

Applicants respectfully disagree with the Office's analysis. First, Applicants submit that claims 1-32 fall within the process and machine statutory categories enumerated under 35 U.S.C. §101. Further, for at least the reasons described herein, Applicants submit that claims 1-32 are not directed to nothing more than laws of nature, natural phenomena, or abstract ideas and that, unlike the claims at issue in *In re Comiskey*, claims 1-32 do not seek "to patent the use of human intelligence in and of itself."

For example, the specification of the instant application describes an apparatus (and corresponding method) that can objectively determine whether a desired emotion is properly induced in a user based on changes in bioparameters, which are extracted from biosignals detected from the user's body. (See, Specification at page 3). In one embodiment, the apparatus (and corresponding method) can extract bioparameters (e.g., heart rate, skin conductive response magnitude, heart rate variability, etc.) from biosignals, which contain information on the user's heartbeat and skin resistance, before and after physical signals apply

stimuli to the user's body based on a selected emotion induction protocol that corresponds to the desired emotion. (See, Specification at page 7). Further, the emotion induction protocol can specify contents to stimulate cognitive action of the user's central nervous system (e.g., predefined visual images) and conditions to stimulate physiological action of the user's autonomic nervous system (e.g., predefined auditory stimuli, olfactory stimuli, etc.). (See, Specification at pages 7-8).

In an embodiment, the apparatus (and corresponding method) can determine whether the desired emotion is properly induced in the user based on increase/decrease patterns of the extracted bioparameters, which can be generated by calculating changes in the extracted bioparameters before and after the physical signals are applied to the user's body. (See, Specification at page 9). The generated increase/decrease patterns of the extracted bioparameters can then be compared to predefined increase/decrease patterns of the bioparameters, as specified in bioparameter change models, which can model responses of a person's autonomic nervous system in various emotional states based on empirical studies. (See, Specification at page 9). In this embodiment, if the increase/decrease patterns of the extracted bioparameters deviate from the predefined increase/decrease patterns specified in bioparameter change models, then the apparatus (and corresponding method) can change the emotion induction protocol so that the physical signals apply different stimuli to the user's body. (See, Specification at page 11).

For instance, to use the Office's example presented on page 2 of the Office action, assume the user has an allergic reaction to a particular olfactory stimulus (e.g., lavender scent) specified in a selected emotion induction protocol. In this case,

the user's allergic reaction would likely be reflected in the increase/decrease patterns of the extracted bioparameters, which in turn would likely deviate from the predefined increase/decrease patterns specified in the bioparameter change models (e.g., if the majority of the people in the empirical studies found lavender scent to be relaxing, as opposed to having an allergic reaction to lavender scent), thereby causing the apparatus (and corresponding method) to change the emotion induction protocol so that a different olfactory stimulus (e.g., jasmine scent) is applied to the user.

For example, independent claim 1 recites an apparatus that induces emotions based on detection of biosignals from a body of a user and on emotion induction protocols that selectively control visual, auditory, olfactory and tactile stimuli. The apparatus includes:

an emotion induction module that selects from a plurality of emotion induction protocols an emotion induction protocol configured to induce a desired emotion selected by the user, extracts one or more bioparameters from the biosignals, and changes the emotion induction protocol depending on increase/decrease patterns of the respective extracted bioparameters so as to induce the emotion, wherein each emotion induction protocol is configured to induce a different emotion by combining contents that induce cognitive action of the central nervous system and conditions that induce physiological action of the autonomic nervous system;

a biostimulation module that outputs physical signals that apply the stimuli to the user's body based on the selected emotion induction protocol; and

a biosignal measurement module that detects one or more biosignals from the user's body and outputs them to the emotion induction module before and after the output of the physical signals from the biostimulation module.

In this way, the apparatus of claim 1, and claims 2-14 and 29-31, which depend therefrom, as well as the analogous method of claim 15, and claims 16-28 and 32, which depend therefrom, are directed to using an objective stimulus/response

technique to change an emotion induction protocol depending on increase/decrease patterns of respective extracted bioparameters so as to induce a desired emotion selected by the user. Whether the user subjectively feels that the desired emotion has been induced need not be considered; however, the specification of the instant application describes that, in one embodiment, the subjective opinion of the user can also be detected (e.g., by detecting when the user presses a satisfaction button) and used to supplement the objective analysis of the increase/decrease patterns of the extracted bioparameters. (See, Specification at page 11).

For at least these reasons, Applicants submit that claims 1-32 recite not only a specific and substantial utility, a credible utility, or a well-established utility, but also recite enumerated categories of statutory subject matter under 35 U.S.C. §101 that do not fall within the judicial exceptions of laws of nature, natural phenomenon, and abstract ideas. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §101 of claims 1-32 be withdrawn.

#### **Claim Rejection – 35 U.S.C. §112**

Claims 1-32 have been rejected under 35 U.S.C. §112, first paragraph, on the basis that, in view of the rejection of the claims under 35 U.S.C. §101, one skilled in the art allegedly would not know how to use the claimed invention. Applicants respectfully traverse the rejection for at least the same reasons presented with respect to the rejection of claims 1-32 under 35 U.S.C. §101. Thus, Applicants submit that claims 1-32 recite patentable subject matter in accordance with 35 U.S.C. §101 that does not fall within a judicial exception, so that one skilled in the art would know how to use the claimed invention in accordance with 35 U.S.C. §112,

first paragraph. Accordingly, Applicants respectfully request that the rejection of claims 1-32 under 35 U.S.C. §112 be withdrawn.

### Conclusion

Applicants note that the Office did not reject claims 1-32 under 35 U.S.C. §§102 or 103. Since the Office is directed to evaluate the claims for compliance with 35 U.S.C. §§102 and 103 when making a rejection under 35 U.S.C. §101 (see, e.g., MPEP §2106(B)), it is implicit in the Office action that the Office has not identified references that would support a rejection of claims 1-32. Accordingly, when the above noted rejections under §§101 and 112 are withdrawn, the claimed subject matter should be in condition for allowance. If the Examiner subsequently rejects any of the pending claims under §§102 or 103, the rejection would be a new grounds. Accordingly, any such rejection in an Office action should be made non-final.

It is believed that this Amendment does not require additional fees. However, if additional fees are required for any reason, please charge Deposit Account No. 02-4800 the necessary amount. In the event that there are any questions concerning this paper, or the application in general, the Examiner is respectfully urged to telephone Applicants' undersigned representative so that prosecution of the application may be expedited.

Respectfully submitted,

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